

REMARKS

In the Office Action, the Examiner¹ objected to the title of the invention as being non-descriptive; and to claims 17, 19, and 20 because of informalities. The Examiner rejected claims 17 and 19 under 35 U.S.C. § 102(e) as being anticipated by Kloster et al. (U.S. Patent No. 6,737,365, hereafter "Kloster"); and rejected claims 18 and 19 under 35 U.S.C. § 103(a) as being unpatentable over Kloster in view of Lin et al. (U.S. Application No. 2004/0175958, hereafter "Lin"). Applicants have cancelled claims 1-16, amended claims 17, 19, and 20, and added new claims 21-33. Claims 17-33 are pending.

With respect to the Amendment to the Specification, Applicants have amended the title of the invention as required by the Examiner. Accordingly, Applicants respectfully request that the Examiner's objection to the title be withdrawn. In addition, claims 17, 19, and 20 have been amended to correct informalities as required by the Examiner. Applicants respectfully request the Examiner withdraw the objection with respect to claims 17, 19, and 20. Applicants have also added new claims 21-33 to set forth additional aspects of the present invention.

Applicants acknowledge the Interview Summary attached to the Office Action mailed January 11, 2005. In the Interview Summary, the Examiner stated that a new Office Action (mailed January 11, 2005) was provided to Applicants because a blank form 892 was included in an Office Action mailed December 28, 2004. Applicants thank the Examiner for the courtesy extended during the interview.

¹ The Office Action contains a number of statements reflecting characterizations of the related art and the claims. Regardless of whether any such statement is identified herein, Applicants decline to automatically subscribe to any statement or characterization in the Office Action.

The Examiner rejected claims 17 and 19 under 35 U.S.C. § 102(e) as being anticipated by Kloster. In order to support a rejection under 35 U.S.C. § 102, each and every element of each of the claim in issue must be found, either expressly described or under principles of inherency, in that single reference. Furthermore, “[t]he identical invention must be shown in as complete detail as is contained in the ... claim.” See M.P.E.P. § 2131, quoting *Richardson v. Suzuki Motor Co.*, 868 F.2d 1126, 1236, 9 U.S.P.Q. 2d 1913, 1920 (Fed. Cir. 1989).

Applicants respectfully traverse the rejection, as the cited reference does not teach each and every element of independent claim 17. Claim 17 recites a combination including “forming a porous insulating film above a semiconductor substrate . . . wherein said porous insulating film is irradiated with electron beam to enlarge the size of pores of said porous insulating film.” The Examiner asserts that Kloster teaches or suggests “forming a porous insulating film . . . wherein said porous insulting film . . . is irradiated with an electron beam to enlarge the size of the pores of said porous insulating film.” Office Action at 4. Applicants respectfully disagree.

Kloster does not teach or suggest a “porous insulating film,” or irradiating a film to “enlarge the size of pores of the porous insulating film,” as recited in claim 17. Kloster specifically states that the dielectric material is not porous when formed on a substrate at column 2, lines 8-11. Column 3, lines 45-48, of Kloster teaches that “pores are formed in the dielectric by directing an electron beam at the material after metal interconnects are formed in or through openings in the dielectric layer.” Thus, the “dielectric material,” taught by Kloster “which includes a porogen susceptible to electron beam fragmentation or degradation,” (column 3, lines 55-57), is not porous until “an

electron beam is directed at the dielectric layer to create pores in the material."

(Emphasis added, col. 4, lines 13-14.)

Kloster therefore does not teach or suggest a "forming a porous insulating film above a semiconductor substrate," and accordingly cannot disclose at least a "porous insulating film [which] is irradiated with electron beam to enlarge the size of pores of said porous insulating film," as recited in claim 17. Thus, claim 17 is allowable over Kloster for at least this reason. Further, claim 19 depends from independent claim 17, and claim 19 is allowable at least due to its dependence from claim 17. Accordingly, Applicants respectfully request that the Examiner reconsider and withdraw the rejection under 35 U.S.C. § 102(e).

The Examiner rejected claims 18 and 20 under 35 U.S.C. § 103(a) as being obvious from Kloster in view of Lin. To establish a *prima facie* case of obviousness, three basic criteria must be satisfied. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify a reference or to combine references. Second, there must be a reasonable expectation of success. Third, the prior art reference (or references when combined) must teach or suggest all of the claim elements. See M.P.E.P. § 2143. Moreover, the requisite teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, not in Applicants' disclosure. See *In re Vaeck*, 947 F.2d 488, 20 U.S.P.Q.2d 1438 (Fed. Cir. 1991). See M.P.E.P. § 706.02(j).

Applicants respectfully traverse the rejection under 35 U.S.C. § 103(a) as the cited prior art of Kloster and Lin does not teach each and every element recited in the

claims. Claims 18 and 20 depend from independent claim 17, and thus incorporate all the limitations of claim 17. As discussed above, Kloster fails to teach at least "porous insulating film [which] is irradiated with electron beam to enlarge the size of pores of said porous insulating film," as recited in claim 17, and required by claim 18 and 20. Lin also fails to teach a "porous insulating film . . . irradiated with electron beam to enlarge the size of pores of said porous insulating film." Lin thus fails to cure the deficiencies of Kloster. Accordingly, no *prima facie* case of obviousness has been established with respect to claims 18 and 20. Applicants therefore respectfully request that the Examiner reconsider and withdraw the rejection of claims 18 and 20 under 35 U.S.C. § 103(a) as being obvious from Kloster in view of Lin.

In view of the foregoing amendments and remarks, Applicants respectfully request reconsideration and reexamination of this application and the timely allowance of the pending claims.

Please grant any extensions of time required to enter this response and charge any additional required fees to our deposit account 06-0916.

Respectfully submitted,

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Dated: April 11, 2005

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